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On a problem of Polya and Szegö

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Abstract

We give a new proof of a theorem, which is originally due to Gehring and Pommerenke on the triviality of the extrema set Mf of the inner mapping radius $|f'(\zeta)|(1 - |\zeta|2)$ over the unit disk in the plane, where the Riemann mapping function f satisfies the well-known Nehari univalence criterion. Our main tool is the local bifurcation research of Mf for the level set parametrization $fr(\zeta) = f(r\zeta)$, $r > 0$.